## DEFENCE COOPERATION FROM ECONOMIC POINT OF VIEW

Smart Defence initiative from 2012 NATO Chicago Summit (Nato 2015b) and European Defence Agency (EDA) Pooling & Sharing (P&S) initiatives (EDA 2013) brought defence cooperation into discussion in Europe. Background for both initiatives was savings due to 2008 finance crisis and smaller defence budgets. Both Smart Defence (Giegerich 2012, 70) and P&S (EDA 2013) suggested both specialisation to different capabilities between nations as well as producing capabilities cooperatively in ad hoc groups of two or more nations. Smart Defence also called for aligning national capability targets to those of NATO (Giegerich 2012, 70). A NATO (2015a) report defines concept of defence cooperation through two dimensions: military level (support, capability or service) and the cooperation type (specialization, integration). In general, the interpretation of defence cooperation cannot be quite the same for a country that is a member of a military alliance like NATO and a non-aligned country like Sweden or Finland, because of its different security policy implications.

When discussing the concept of a public good, a common example is national security or defence. A public good has two properties: it can be used by everyone and indeed, it even cannot be taken away from any individual and also that in its production, the variable costs are zero. (se eg. Hartley & Solomon 2015, 37, Kanniainen 2019) This leads to a free riding problem and therefore public goods are financed by obligatory taxes. In the alliance theory, the contribution of smaller countries to the overall allied defence is less than that of larger countries while for the smaller countries, the significance of alliance safety guarantee to their security is larger in comparison to their own defence than in larger countries, and this results to smaller incentives and smaller relative defence spending in smaller allied countries (Olson & Zeckhauser 1966). The security guarantee of an alliance can be seen as a kind of public good and the current NATO 2 % defence spending goal is an attempt to lessen the free riding problem. In fact, the burden sharing issues raised recently by President Trump are almost as old as Nato itself.

In short-term decision making cost may be divided to variable and fixed costs. Even though production volumes as well as time-horizon affects the relative proportions, there are products, such as cleaning, where variable costs dominate while for others, such as software products, fixed costs are larger. Variable costs are large in e.g. ammunition, naval ships and vehicles while in some surveillance and reconnaissance systems fixed costs are significant. GPS position information is almost a pure public good, at least when signal is undisturbed.

From the economic perspective, defence cooperation may be easier when it involves systems with high fixed costs, because extra unit will cost little. According to Bertelman (2014, 58), one both economically and strategically significant cooperation area among the Nordic countries is development of common air surveillance by combining the existing sensor systems. There is an agreement between Finland and Sweden for using reserve airfields (Engvall, Frisell & Lindström 2018). Both common air picture and mutual using of reserve airfields brings little variable costs on top of the large fixed costs.

There are few calculations on economic savings of defence cooperation in the literature. But when the driving force for cooperation is capability improvement, it is even harder to make cost-benefit calculations as there is not a commonly accepted way to value military capability other than the costs of its inputs. Hartley & Solomon (2015) review various approaches other than based on input coss to measure the value of national security and defence, but conclude that no other way is clearly better. De Spiegeleire et al. (2019) claim that there is a lack of standardised metrics for measuring defence output, albeit with a caveat that their analysis was based on publicly available data. For

defence cooperation, an added complication is in defining a the relevant base for comparison of savings. For example, if two countries train together when one country brings equipment that the other doesn't own, what would be basis of calculating the value of this possibility? The cost of the equipment is clearly not a relevant possibility comparison.

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